

# STANDARD AIRCRAFT CHARACTERISTICS

## F7F-4N "TIGERCAT"

GRUMMAN



**MISSION AND DESCRIPTION**

The F7F-4N airplane is a twin engine night fighter whose mission is to destroy enemy aircraft at night and on days of poor visibility. Provisions are made for radar operator.

This aircraft is designed for catapulting and for arrested landings aboard carrier. The airplane is conventional in design and structure with aluminum alloy single spar folding wings and semi-monocoque fuselage. Automatic pilot, landing gear, shrink strut, main wheel brakes, engine nacelle doors, wing flaps, arresting hook retraction mechanism, rudder booster, gun chargers and wing folding mechanism are hydraulically operated. Spring type balance tabs are provided on both ailerons and both elevators, mechanically linked balance tab is provided on rudder. The left aileron, left elevator, and rudder are provided with trim tabs adjustable in flight by the pilot. Capacity of 16 gallons of water for each engine is supplied for water-injection.

The APS-19 equipment is airborne radar that has provisions for operating in search, intercept, aim and beacon functions.

This is the final night fighter version of the F7F series and it has increased strength over the F7F-3N. Service use started in 1946.

**DIMENSIONS**

WING AREA.....455 sq. ft.  
SPAN.....51' - 6"  
LENGTH.....46' - 11"  
HEIGHT.....16' - 7"  
TRHD.....20' - 5"  
H.A.C.....9' - 3"

**WEIGHTS**

Loadings	Lbs.	L.F.
EMPTY.....	17,518.....	
BASIC.....	18,518.....	
DESIGN.....	21,500.....	5.9
COMBAT.....	22,091.....	5.7
MAX.T.O.....	24,139.....	5.2
MAX.LAND.....	24,500.....	

All weights are actual.

**FUEL AND OIL**

Gals.	No. Tanks	Location
375	3	Fuse., S.S.
300	1	Fuse., Drop
300	2	Wing, Drop

FUEL GRADE.....100/130  
FUEL SPEC...MIL-F-5572

**OIL**

CAPACITY (Gals.).....42  
GRADE.....1100/1120  
SPEC.....MIL-O-6082

**ELECTRONICS**

INTERCEPT SEARCH  
RADAR.....AN/APS-19  
WHF.....AN/ARC-28  
ALTIMETER.....AN/APN-1  
IFF.....AN/APX-2  
HOMING.....AN/ARR-2  
RANGE RECEIVER.....AN/ARC-5

**POWER PLANT**

NO. & MODEL.....(2) R-2800-34W  
MFR.....Pratt and Whitney  
SUPERCH.....1 Stage, 2 Speed  
PROP. GEAR RATIO.....20:9  
PROP. MFR.....Har. Std.  
PROP. DES. NO.....6501A-0  
NO. BL./DIA.....3/13'-2"

**RATINGS**

	Rpm @	Rpm @	Alt.
T. O.	2,100	2,800	S. L.
MIL.	2,100	2,800	3,000'
	1,700	2,800	16,000'
NORM.	1,700	2,600	S.L. to 8,500'
	1,500	2,600	18,500'
SPEC. NO. N-8C81			

**ORDNANCE****GUNS**

No.	Size	Location	Rds.
4	20 mm	Wing	800

**BOMBS AND ROCKETS**

Type	Size	Location	No.
HVAR	5"	Wing	8
A.R.	11.75"	Wing	2
D.B.	650#	Wing	2
Bomb	250#	Wing	2
Bomb	500#	Wing	2
Bomb	1,000#	Wing	2
Torp.	Mk.13-3	Fuselage	1
A.R.	11.75"	Fuselage	1
Bomb	1,600#	Fuselage	1
Bomb	2,000#	Fuselage	1
Mine	1,600#	Fuselage	1
Mine	1,860#	Fuselage	1

**FIRE CONTROL**

Sight, Optical, Illu....Mk. 8-6  
MAX. BOMB CAP.....4,600 lbs.



## PERFORMANCE SUMMARY

LOADING CONDITION	(1) FIGHTER 1-300 Gal. Tank	(5) FIGHTER 1-2,000# Bomb 2-1,000# Bombs	
TAKE-OFF WEIGHT lbs.	24,139	26,167	
Fuel (Fixed/Drop) lbs.	2,250/1,800	2,250/-	
Bombs lbs.	—	4,000	
Wing/Power Loading (A) lbs/sq.ft; lbs/bhp.	53.0/8.0	57.5/8.7	
Stall Speed--Power off kn.	98.5	102.6	
Stall Speed--Power off - No Fuel kn.	89.8	98.1	
Stall Speed--Power on kn.	83.7	87.2	
Maximum Speed/Alt (B) kn/ft.	345/23,000	313/22,700	
Take-off Distance, deck -- calm ft.	902	1,155	
Take-off Distance, deck 25 kn. ft.	455	600	
Take-off Distance, Airport ft.	—	—	
Rate of climb -- sea level (B) ft/min.	2,790	2,360	
Service Ceiling (B) ft.	37,300	35,700	
Time-to-climb 10,000 ft. (B) min.	3.7	4.4	
Time-to-climb 20,000 ft. (B) min.	8.3	10.0	
Combat Range/V av 15,000 ft. n.mi/kn.	1,055/210	425/162	
Combat Radius/V av (F-1) ft. n.mi/kn.	305/198	20/198	
LOADING CONDITION	(2) COMBAT	(3) COMBAT	(4) COMBAT
GROSS WEIGHT lbs.	22,091	22,091	22,091
Engine power	Combat	Military	Normal
Fuel lbs.	2,250	2,250	2,250
Bombs/Tanks	None	None	None
Max. speed at sea level kn.	328	313	294
Max. speed/Alt kn/ft.	381/22,100	379/24,500	355/23,000
Combat speed/Alt kn/ft.	349/15,000	340/15,000	328/15,000
Rate of climb SL ft/min.	4,460	4,100	3,120
Ceiling for 500 fpm R/C ft.	37,600	37,600	35,900
Time-to-climb/Alt. min/ft.	5.6/20,000	6.0/20,000	7.3/20,000

## NOTES

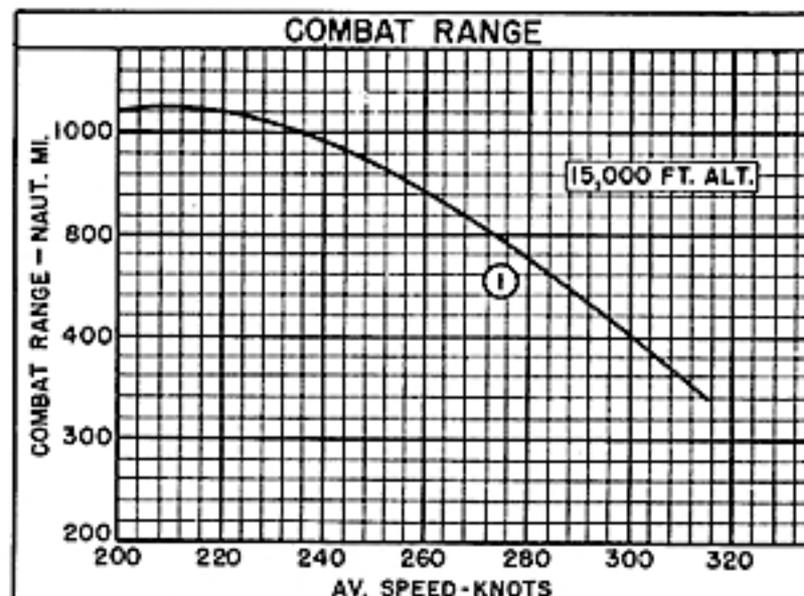
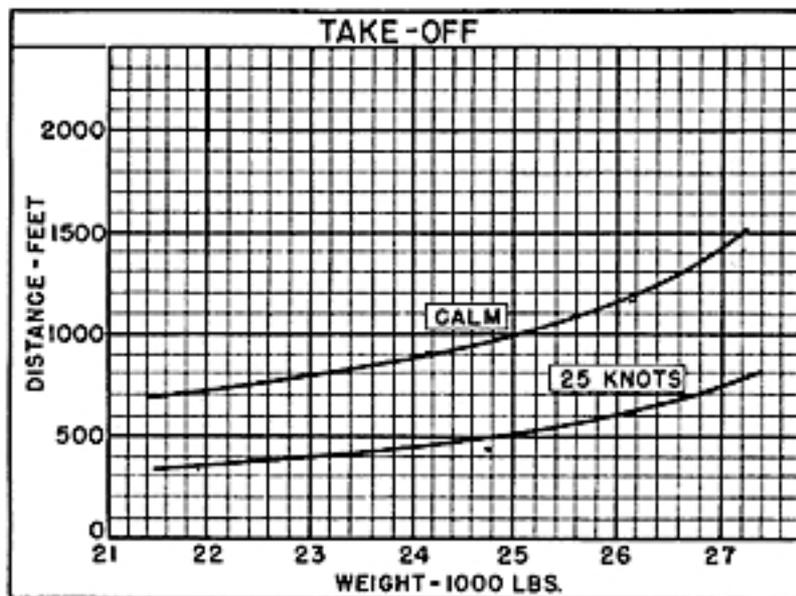
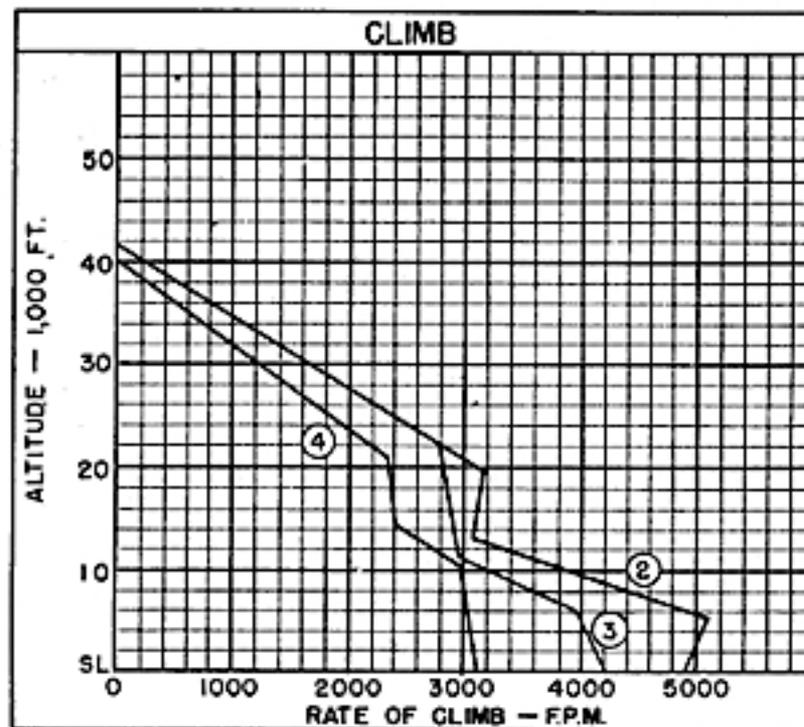
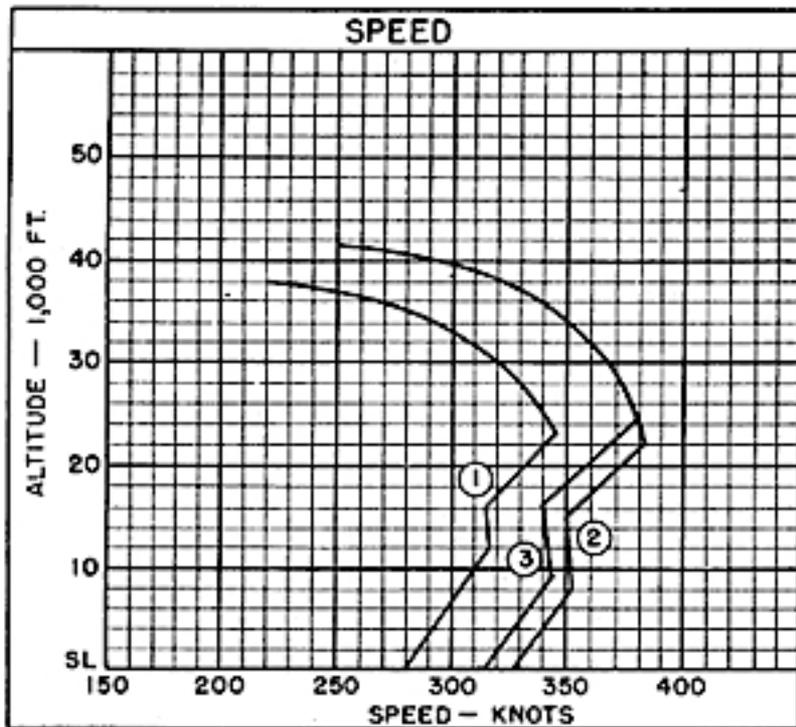
- (A) BHP at Maximum Critical Altitude  
(B) Normal BHP

Performance is based on flight tests of the F7F-1 and F7F-3N airplanes.

Range and radius are based on flight test fuel consumption data increased by 5%.

Combat conditions include two faired Mk. 51-7 wing bomb racks and sway bracing, and fuselage shackle and sway-bracing.

Provisions are incorporated for fuel transfer from droppable to main tanks after take-off.



○ LOADING CONDITION COLUMN NUMBER

Standard Aircraft Characteristics NAVALP 1335E (REV. 2-50)

# NOTES

## FIGHTER COMBAT RADIUS FORMULA NO. F-1

<u>WARM-UP</u> 20 min. at 50% normal rated rpm <u>TAKE-OFF</u> 1 min.	<u>RENDEZVOUS</u> 20 min. at sea level at 60% N.S.P. Auto Lean	<u>CLIMB</u> to 15,000 ft. at 60% N.S.P. Auto Lean	<u>CRUISE-OUT</u> at 15,000 ft. Vel. for Max. Range Auto Lean	<u>DROP TANKS</u> and BOMBS  FIRE ROCKETS	<u>COMBAT</u> 20 min. at 15,000 ft. 10 min. combat 10 min. Mil.Pr. and descend	<u>CRUISE-BACK</u> at 1,500 ft. 170 kts. TAS  Auto Lean	<u>RESERVE</u> 60 min. at Vel. for Max. Range Auto Lean
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$$\text{RADIUS} = \text{CLIMB} \div \text{CRUISE-OUT} = \text{CRUISE-BACK}$$

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 Water injection is available for approximately 12 minutes at combat power.  
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Spotting: 210 ft. length is required to spot 15 airplanes on the 96 ft. wide deck immediately aft of the forward ramp on CV-9 class carriers.  
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